

SERVICE MANUAL

STEREO RADIO RECEIVER

SPECIFICATIONS

Frequency range	FM: 87.5 – 108 MHz AM: 530 – 1,710 kHz
Maximum output	1 mW + 1 mW (EIAJ 16 ohms) 84 mW (EIAJ 8 ohms)
Power source	DC 3V using two size AAA (R03) batteries
Speaker	Diameter 36 mm, 8 ohms
Output	Headphones jack (Stereo mini jack)
Frequency response	350 – 1,700 Hz (EIAJ)
Maximum recording time	Approx. 60 seconds (microphone) Approx. 30 seconds (radio)
Maximum dimensions	46 (W) × 120 (H) × 19.8 (D) mm (1 ¹³ / ₁₆ × 4 ³ / ₄ × ²⁵ / ₃₂ in.)
Weight	Approx. 70 g, 2.5 oz (excluding batteries)

- Design and specifications are subject to change without notice.

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC	87-A20-851-040	IC, TA2111F		C51	87-016-427-080		C-CAP, E 47-6.3V
	S4-733-090-000	IC, ISD33090ED		C60	87-010-943-180		C-CAP, E 100-4V
	87-A21-231-010	IC, MC68HC05P6SCD2776		C61	87-010-943-180		C-CAP, E 100-4V
	87-A20-755-080	IC, AK93C45AF		C62	87-010-044-080		CAP, E 47-4V
	87-017-506-080	IC, PST600JMT		CF1	S0-004-550-080		CER, FILTER PFS455A6
	87-002-649-080	IC, NJM324M		CF2	S0-051-610-000		CER, FILTER KMFC5161-Z
	87-001-723-080	IC, NJM2076M		CD1	S0-051-610-000		CER, FILTER KMFC5161-Z
	87-A20-847-040	IC, RH5RI333B		HJ1	87-A60-361-010		JACK, HP 3.5MM
				L1	S0-064-700-050		I.F.T. PE/MITSUMI
				L4	S0-400-262-000		C-INDUCTOR 1UH
				L6	S1-929-760-000		ANT COIL ASSY 5-8-40
				L9	87-A50-010-080		C-INDUCTOR 22UH
				L10	87-A50-011-080		C-INDUCTOR 47UH
				L11	87-A50-010-080		C-INDUCTOR 22UH
TRANSISTOR	89-502-115-080	C-FET, 2SK211GR		L12	87-003-241-080		CHIP INDUCTOR 4.7UH
	S0-084-700-030	C-TR, BC847C		MIC1	S1-035-230-000		MIC, CONDENSER MIC
	89-113-625-080	C-TR, 2SA1362GR		PVC1	S3-221-250-010		PVC, AM/FM
	89-115-865-080	C-TR, 2SA1586Y		SW1	S4-200-211-000		SW, SLIDE 4P2T
	ST-RC3-63T-KL0	C-TR, DTC363TK		SW2	S2-210-211-000		SW, SLIDE 2P2T
	89-508-804-080	C-FET, 2SK880Y		SW3	S2-300-211-030		SW, SLIDE 2P3T
	87-026-414-070	C-TR, RN1307		SW4	87-036-220-080		SW, TACT
	89-413-284-080	C-TR, 2SD1328T		T1	S0-051-180-560		IFT(AM OSC)
	86-NFZ-685-080	TR, DTA144TKA		T2	S0-051-140-480		IFT(AM IF) 5114-T
				VR1	SA-082-033-000		VR, RK08H1210GUA
				X1	S6-002-000-010		CER, RESO 2.000MHZ
				FRONT C.B			
				LED1	87-A40-321-080		LED, LT1D40A(RED)
				LED2	S0-021-010-000		LED, SML-210MT(GRN)
DIODE	87-001-166-080	C-DIODE, 1SS301		SW5	S8-RC9-170-000		PLATE, METAL CONTACT(CRIC90)
	87-001-221-080	C-DIODE, 1SS319		SW6	S8-RC9-170-000		PLATE, METAL CONTACT(CRIC90)
				SW7	S8-RC9-170-000		PLATE, METAL CONTACT(CRIC90)
				SW8	S8-RC9-170-000		PLATE, METAL CONTACT(CRIC90)
				SW9	S8-RC9-170-000		PLATE, METAL CONTACT(CRIC90)
MAIN C.B	BPF1	87-030-141-080	BANDPASS FILTER				
	C20	87-016-424-080	C-CAP, E 33-10V				
	C22	87-010-853-010	C-CAP, E 220-4V				
	C23	87-010-853-010	C-CAP, E 220-4V				
	C32	87-010-853-010	C-CAP, E 220-4V				
	C33	87-010-853-010	C-CAP, E 220-4V				
	C35	87-010-424-080	C-CAP, TN 4.7-4V				
	C43	87-016-424-080	C-CAP, E 33-10V				
	C46	87-016-424-080	C-CAP, E 33-10V				
	C50	87-016-427-080	C-CAP, E 47-6.3V				

- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

Chip Resistor Part Coding



A
抵抗部品コード
Resistor Code

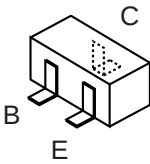
桁表示
Figure

抵抗値
Value of resistor

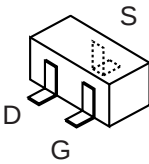
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code : A
				外形／Form	L	W	t	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

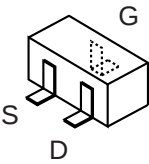
TRANSISTOR ILLUSTRATION



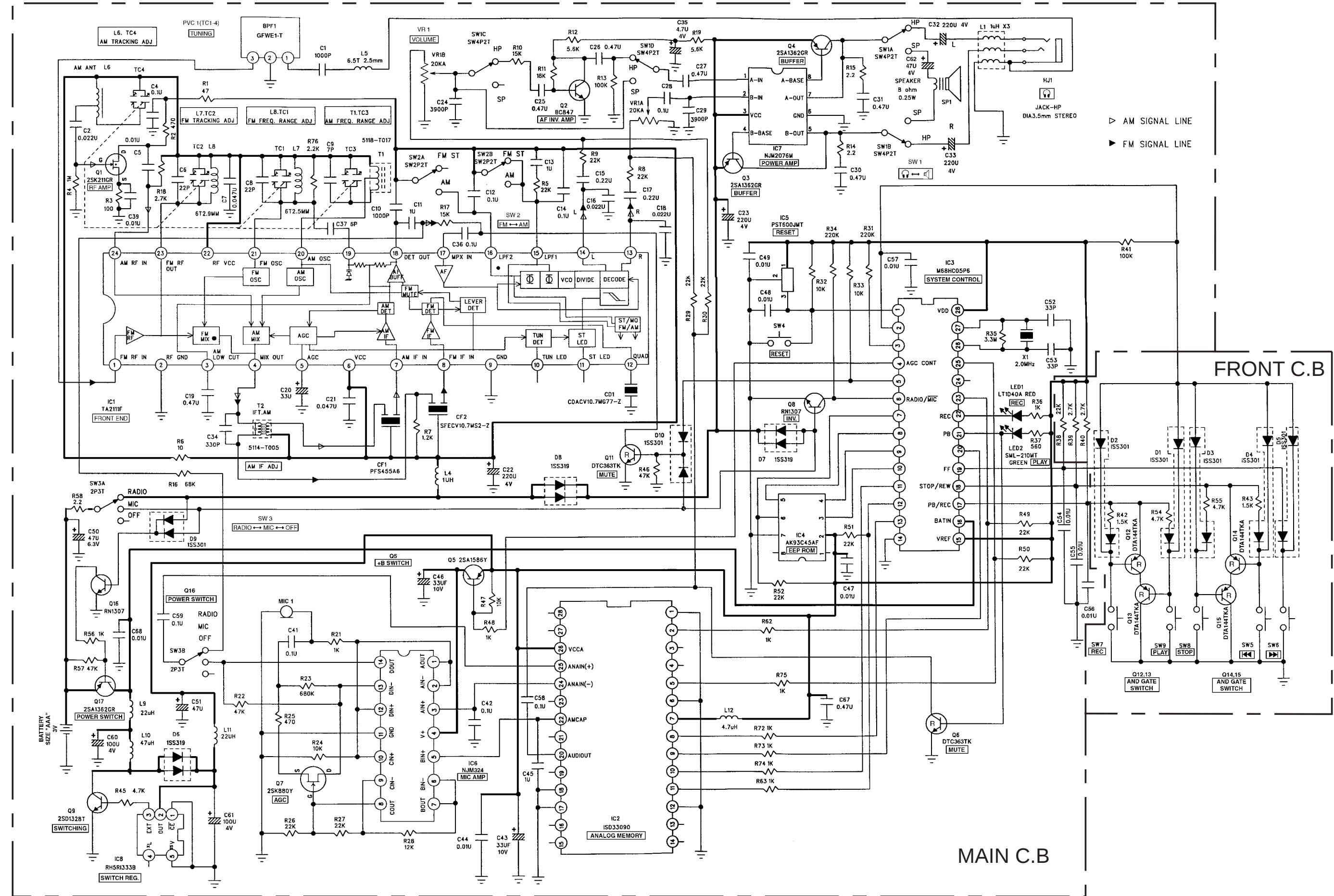
2SA1362
2SA1586
2SD1328
BC847C
DTA144TKA
DTC363TK
RN1307



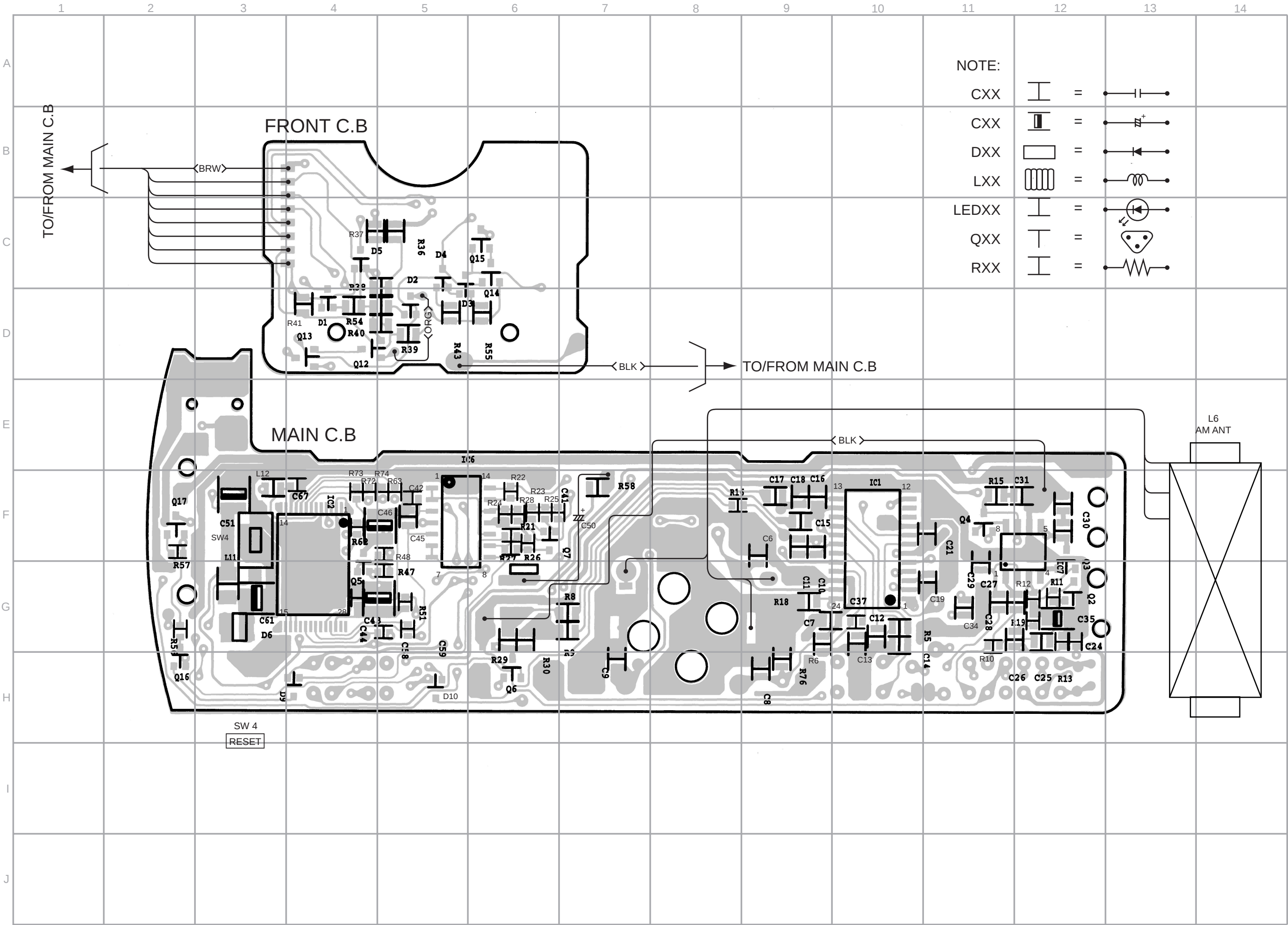
2SK211



2SK880Y



WIRING-1 (MAIN: CONDUCTOR SIDE)



VOLTAGE CHART

TUNER SECTION
TEST CONDITION: SET AM/FM ON ONE FREQUENCY

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
AM	0	0	1.17	2.79	0.48	2.89	2.24	2.89	0	0	5.48	2.85
FM	0.81	0	0.52	2.35	0.45	2.86	2.82	2.92	0	0	4.78	2.16
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
AM	1.22	1.20	2.84	2.85	0.70	0.99	1.15	2.92	2.85	2.85	2.86	2.88
FM	1.20	1.19	2.07	1.96	0.71	0.77	0.49	2.85	2.93	2.84	2.87	2.84

IC7 NJM2076M								
PIN'S NUMBER	1	2	3	4	5	6	7	8
FM	0	0	2.58	2.20	0.71	0	0.71	2.20

TRANSISTOR	Q1(2SK211GR)		
	G	S	D
FM ST	0	0.35	1.10
AM	0	0.35	1.10

TRANSISTOR	Q2(BC847)		
	E	C	B
SPEAKER	0	0.60	0.59

TRANSISTOR	Q3(2SA1362GR)			Q4(2SA1362GR)		
	E	C	B	E	C	B
FM ST	3	0.69	2.00	2.63	0.68	2.02

REC. SECTION
TEST CONDITION: REC. RADIO/MIC

IC2 ISD33090ED														
PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14
REC.MIC	0	0	0	3.28	3.28	0	3.29	3.29	3.29	3.29	3.29	0	0	0
PIN'S NUMBER	15	16	17	18	19	20	21	22	23	24	25	26	27	28
REC.MIC	0	0	0	0	0	0	0	1.15	0	1.13	1.13	3.29	0	0

IC3 M68CH05PSCD2776														
PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14
RADIO	3.30	3.28	3.24	3.31	0	3.24	3.30	0	0	0	0	3.30	3.31	0
REC. MIC	3.29	3.26	3.22	0.15	0.02	0	3.28	0	0	0	3.29	3.28	3.29	0
PLAY	3.20	3.26	3.22	3.30	3.25	0	3.28	0	0	0	3.30	3.28	3.29	0
PIN'S NUMBER	15	16	17	18	19	20	21	22	23	24	25	26	27	28
RADIO	3.31	3.00	3.31	3.31	3.30	3.31	3.24	3.31	3.31	0	3.31	3.31	2.20	3.31
REC. MIC	3.29	2.92	3.29	3.29	3.30	3.31	3.22	0.09	3.28	0	3.29	1.89	1.52	3.29
PLAY	3.29	2.92	3.29	3.29	3.30	3.31	0	3.29	3.28	0	3.29	1.89	1.52	3.29

IC4 AK93C45AF								
PIN'S NUMBER	1	2	3	4	5	6	7	8
REC. MIC	0	3.31	0	0	0	3.28	0	0

IC5 PST600JMT			
PIN'S NUMBER	1	2	3
POWER ON	3.30	0	3.30

IC6 NJM324							
PIN'S NUMBER	1	2	3	4	5	6	7
REC. MIC	1.14	1.14	1.14	3.28	1.16	1.16	1.16

PIN'S NUMBER	8	9	10	11	12	13	14
REC. MIC	1.03	1.14	1.14	0	1.14	1.14	1.14

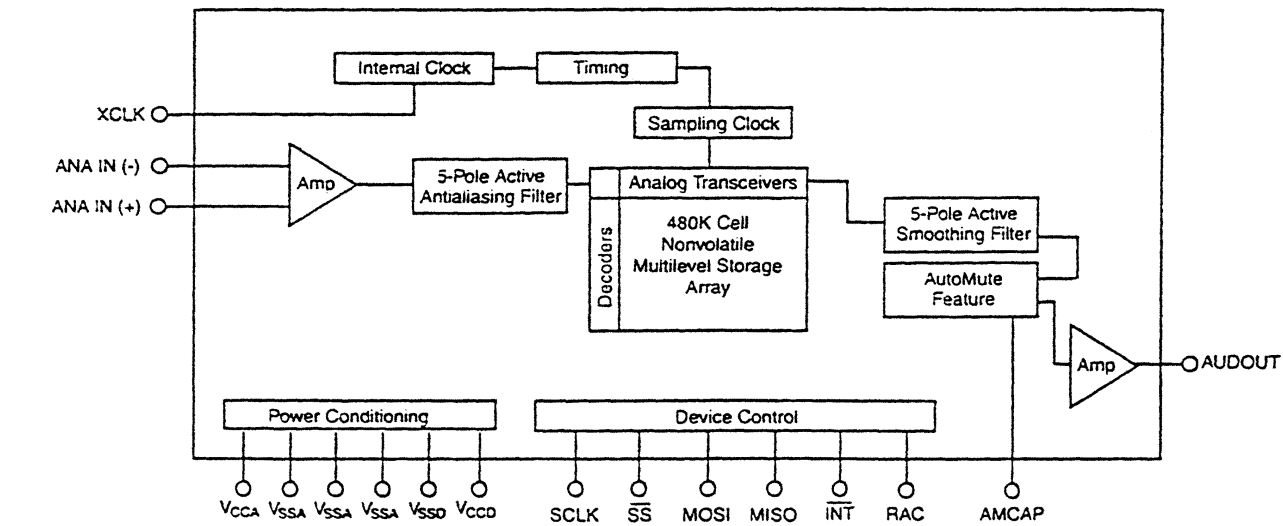
IC8 RH5RI333B					
PIN'S NUMBER	1	2	3	4	5
RADIO	0	0	3.31	1.21	0
REC. MIC	0	3.32	0.48	0	0

TRANSISTOR	Q7(2SK880Y)		
	G	S	D
REC. MIC	1.14	1.12	1.14

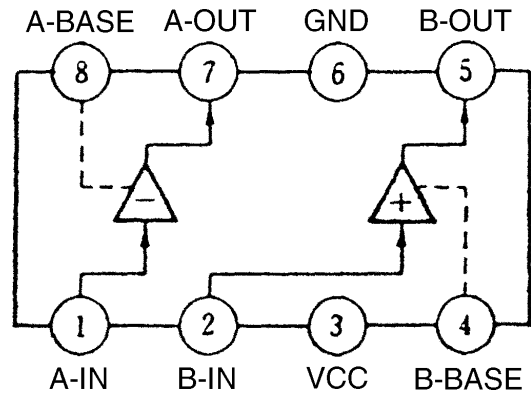
TRANSISTOR	Q5(2SA1586Y)			Q8(RN1307)			Q16(RN1307)			Q17(2SA1362GR)		
	E	C	B	E	C	B	E	C	B	E	C	B
RADIO	3.31	0.38	3.31	0	3.24	0	0	0	2.33	3.00	2.98	2.24
REC. MIC	3.30	3.28	2.55	0	0	2.95	0	0	2.41	2.95	2.92	2.20

TRANSISTOR	Q6(DTC363T)			Q9(2SD1328T)		
	E	C	B	E	C	B
RADIO	0	0	3.24	0	3.01	0
PLAY	0	0	0.14			

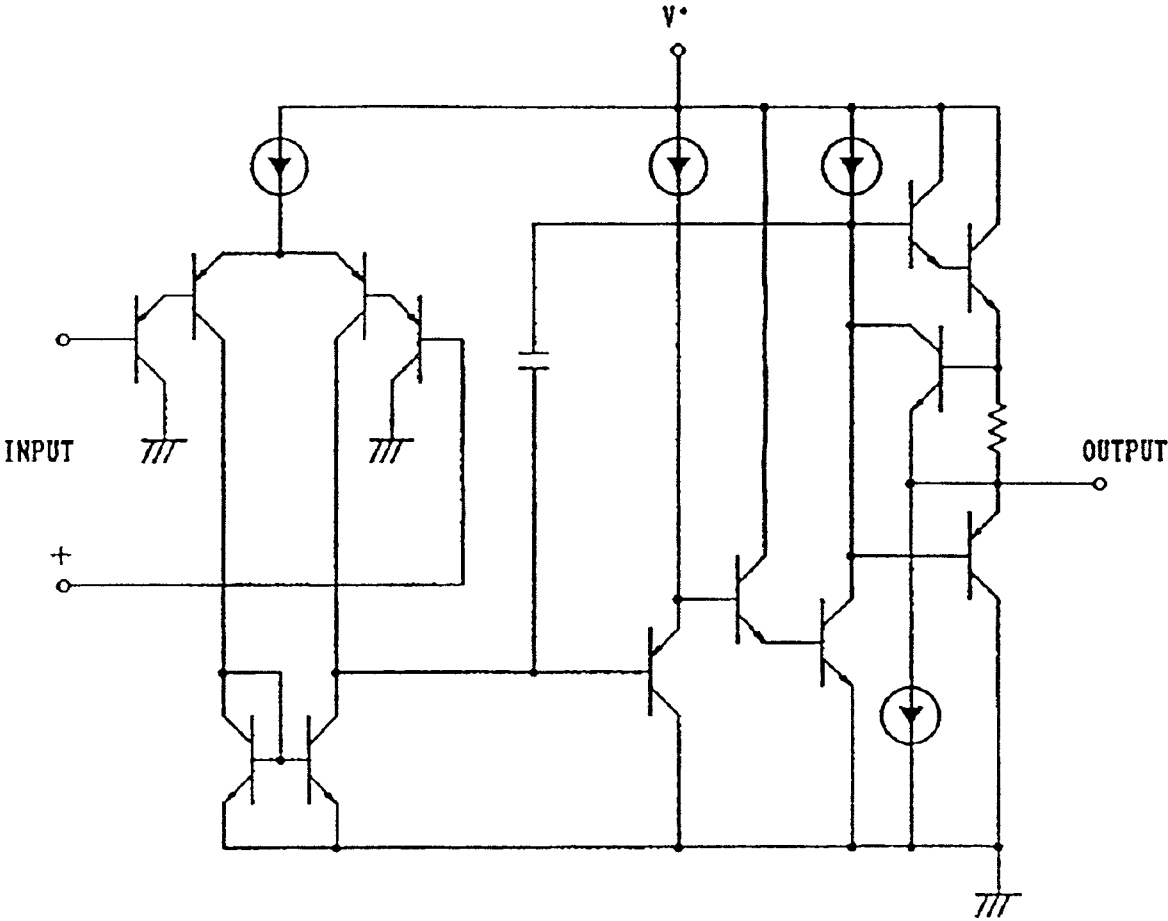
IC BLOCK DIAGRAM
IC, ISD33090ED



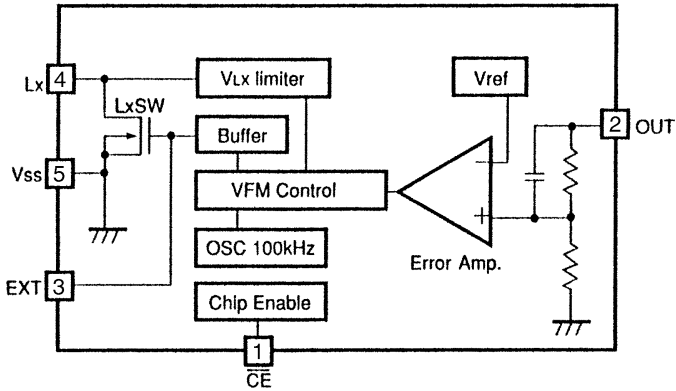
IC, NJM2076M



IC, NJM324M



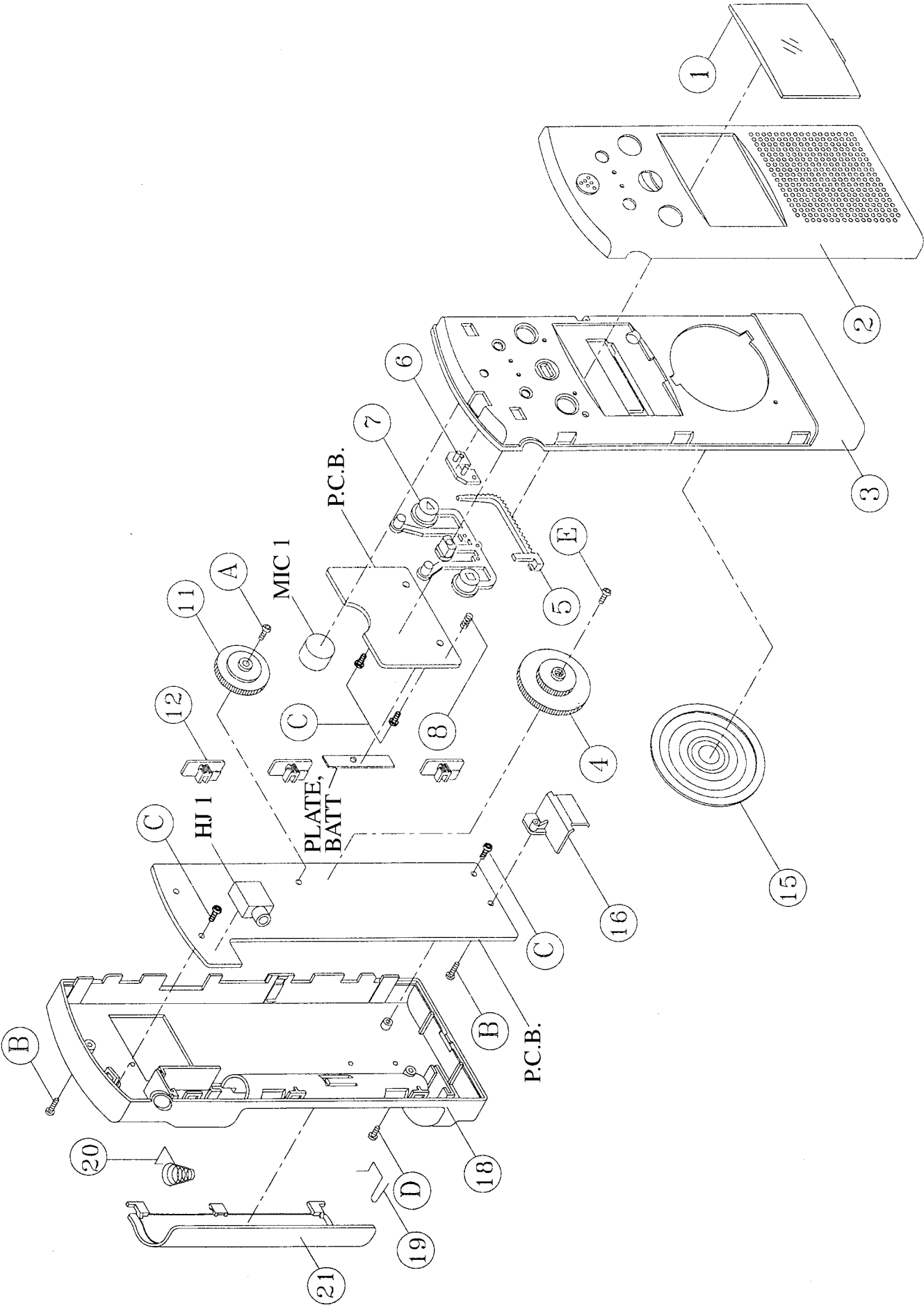
IC, RH5RI333B



IC DESCRIPTION

IC, MC68HC05P6SCD2776

Pin No.	Pin Name	I/O	Description
1	SYSTEM RESET	I	Initializes the system. Low input.
2	WAKE UP	I	Detects the key input and starts up the system. Low input.
3	SYSTEM	—	System selector (setting each model). High: 8RC-9.
4	AGC CONT INPUT SEL	I	AGC control. High: OFF. Low: ON. High: TAPE. Low: MIC.
5	AUD MUTE TIME SEL	I/O	Audio mute. Setting the recording time in the L/L mode. High: ON. Low: OFF. High: 10 sec. Low: 45 sec.
6	RADIO/MIC	I/O	System setting by selecting signal. High: RADIO (PAUSE). Low: MIC (OFF).
7	DO	I	Data input from EEPROM.
8	DI	O	Data output to EEPROM.
9	SK	I/O	System clock to EEPROM.
10	CS	I/O	System selector to EEPROM.
11	ISD MOSI	O	Data output to ISD.
12	ISD MISO	I	Data input from ISD.
13	SCLK	I/O	System clock of ISD.
14	VSS	—	GND. 0 V.
15	VREF	—	Reference voltage to A/D converter. 3.3 V TYP.
16	BAT IN	I	Battery voltage input. (for voltage identification). 8RC-9: BAT IN.
17	PB/REC KEY	I	PB/REC KEY input. 2/3 VCC PB. 1/2 VCC REC.
18	STOP/REW KEY	I	STOP/REW KEY input. 2/3 VCC STOP. 1/2 VCC REW.
19	FF KEY	I	FF KEY input. Low: FF.
20	ISD SS	I/O	ISD system selector.
21	LED PB	I	PB LED.
22	LED REC	I	REC LED.
23	ISD RAC	I	ISD RAC input.
24	TCMP	—	Not used.
25	ISD INT	I	ISD INT input.
26	OSC2	I/O	2.0 MHz ceramic filter.
27	OSD1	I/O	2.0 MHz ceramic filter.
28	VDD	I	Power supply input.



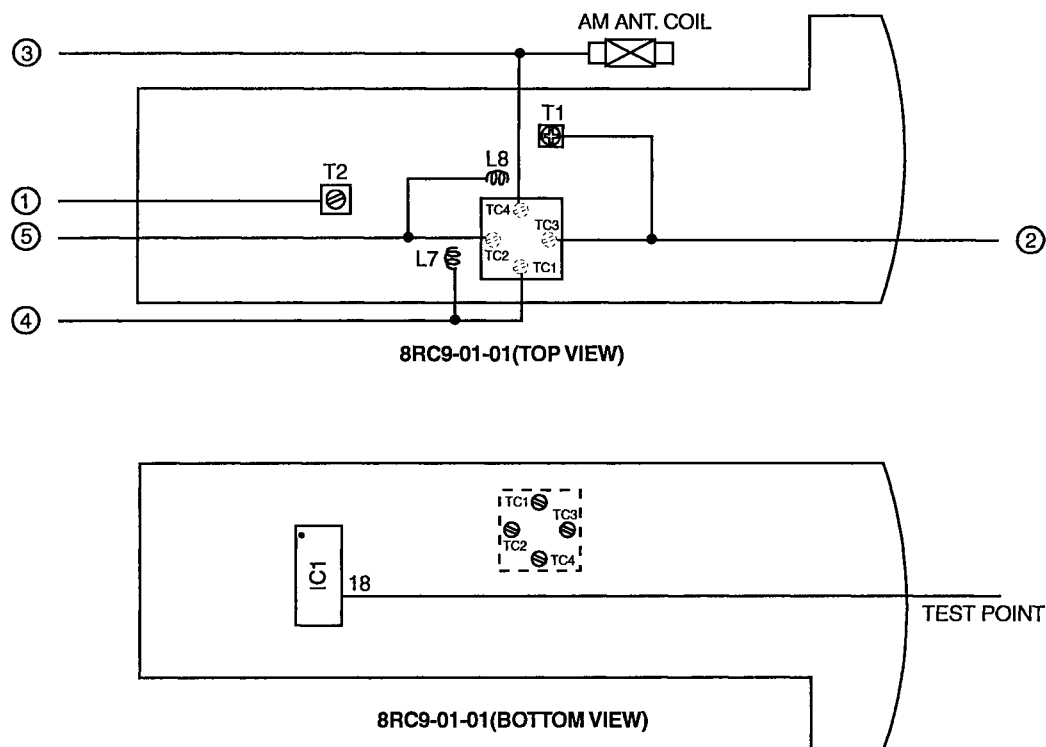
MECHANICAL PARTS LIST 1/1

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REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-RC9-050-200		TUNING WINDOW(CRIC90U)	21	S8-RC9-070-010		LID, BATTERY(CRIC90)
2	S8-RC9-060-200		PANEL, FRONT(CRIC90U)	A	87-357-505-310		SCREW, 1.4-2.5
3	S8-RC9-010-100		CAB, FRONT(CRIC90)	B	87-266-531-310		SCREW, 1.7-5(BLK)
4	S8-RC9-100-000		KNOB, RTRY TUNING(CRIC90)	C	87-353-528-310		SCREW, ST1.7-3.5
5	S8-RC9-110-000		TUNING POINTER(CRIC90)	D	87-264-525-310		SCREW, 1.7-2.5
6	S8-RC9-040-000		LED WINDOW(CRIC90)	E	87-357-529-310		SCREW, 1.7-4
7	S8-RC9-030-100		BTN, KEY OPE(CRIC90)				
8	S8-RC6-200-000		SPR, EARTH COIL				
11	S8-RC9-090-000		KNOB, RTRY VOLUME(CRIC90)				
12	S8-RC9-080-000		KNOB, SLID POW(CRIC90)				
15	S1-480-004-200		SPK, 1.4 8 OHM 0.4W				
16	S8-RC9-120-000		BAR HOLDER(CRIC90)				
18	S8-RC9-020-200		CAB, REAR(CRIC90U)				
19	S8-RC9-140-000		SPR, BATT(+)(CRIC90)				
20	S8-RC9-130-000		SPR, BATT(-)(CRIC90)				

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

TUNER SECTION (YU, YJ VERSION)

- | | |
|---|--|
| <p>1. AM IF Adjustment
 Test point: IC1 (TA2111F) 18 PIN
 Adjustment location: T2
 T2 ----- 455 kHz</p> | <p>4. FM Frequency Range Adjustment
 Test point: IC1 (TA2111F) 18 PIN
 Adjustment location: L7, TC1
 L7 ----- 87 MHz
 TC1 ----- 109 MHz</p> |
| <p>2. AM Frequency Range Adjustment
 Test point: IC1 (TA2111F) 18 PIN
 Adjustment location: T1, TC3
 T1 ----- 517 kHz (YU VERSION)
 515 kHz (YJ VERSION)
 TC3 ----- 1750 kHz (YU VERSION)
 1635 kHz (YJ VERSION)</p> | <p>5. FM Sensitivity Adjustment
 Test point: IC1 (TA2111F) 18 PIN
 Adjustment location: L8, TC2
 L8 ----- 88 MHz waveform max.
 TC2 ----- 108 MHz waveform max.</p> |
| <p>3. AM Sensitivity Adjustment
 Test point: IC1 (TA2111F) 18 PIN
 Adjustment location: AM ANT COIL, TC4
 AM ANT COIL ----- 600 kHz waveform max.
 TC4 ----- 1400 kHz waveform max.</p> | |

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
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REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-RC9-910-200		INSTRUC, BOOK(CRIC90U)
2	S0-100-290-000		HP, SET HP-M029(T)



サービス技術ニュース	
番号	連絡内容
Gーー	
Gーー	
Gーー	

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111（代表）
AIWA CO.,LTD. 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03(3827)3111